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ABSTRACT

The effects of an administration of the School Health Curriculum Project Heart Unit to a group of one-hundred and forty-five sixth-grade students of lower socioeconomic status was examined. The Heart Unit was administered over a period of nine weeks, five times per week, one hour per day. Participants were divided into separate treatment and control groups and the scores achieved by each on pre- and post-test administrations of the Teenage Self-Test on Smoking were analyzed. These analyses indicated that the only variables affecting performance on the cigarette smoking attitude inventory after exposure to the experimental curriculum were sex, residency status, best friend's smoking status, and older siblings' smoking status. Welfare status and parental smoking behavior did not appear to influence achievement on post-test mean scores. A significant difference was noted at the .05 level between pre- and post-tests of the students participating in the Heart Unit. Therefore, the curriculum appeared to have an effect on the experimental groups reflected in the significant difference between pre- and post-test mean scores. Based on these findings, it was concluded that: (1) the School Health Curriculum Project Heart Unit can be effectively implemented in lower socioeconomic schools; (2) females achieved significantly higher post-test mean scores than males; (3) welfare status does not influence post-test mean scores of those students exposed to the curriculum unit; (4) best friend's smoking behavior can influence a student's performance on the self-test on smoking; (5) older siblings at home who smoke can exert a negative influence on a student's performance on the self-test; and (6) parental smoking behavior does not exert an influence on student's performance with respect to the self-test. (MJB)

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EFFECTS OF THE SCHOOL HEALTH CURRICULUM PROJECT HEART UNIT AND DEMOGRAPHIC VARIABLES ON CIGARETTE SMOKING ATTITUDES OF LOWER SOCIOECONOMIC SIXTH GRADE STUDENTS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Few research studies have been undertaken concerning the assessment of cigarette smoking attitudes of lower socioeconomic students. In addition, there is a lack of information with respect to assessing the impact of health education programs on lower socioeconomic groups.

Purpose

The purpose of this study was to analyze the effects of the School Health Curriculum Project Heart Unit and selected demographic variables on the cigarette smoking attitudes of lower socioeconomic sixth grade students.

Significance

Science has yet to prove a direct cause and effect relationship between cigarette smoking and cardiovascular disease. However, cigarette smoking is considered a major risk factor in the etiology of cardiovascular disease and the rationale for that belief is well documented. (1)

The prevention of incurring heart disease begins in childhood. Children of all ages must be made aware of the risk factors associated with cardiovascular disease, which is the number one cause of death in most industrialized countries. (2)

Health education can play a key role in the prevention of heart disease. Affective learning opportunities properly implemented can possibly promote positive attitudes among students with respect to cigarette smoking. In addition, health educators should be aware that cigarette smoking is a complex social behavior which might have its attitudinal genesis long before a child, more specifically a lower SES child, enters school. Some of the possible factors influencing a child before and during his school years include: sex, welfare status, parental residency status, parental smoking behavior, siblings smoking behavior, and the smoking behavior of friends.

It is important not only to evaluate health education programs, but also examine the roles different social factors can play in influencing smoking behavior.

Hypotheses

With respect to students exposed to the School Health Curriculum Project Heart Unit:

(1) Females will achieve significantly higher posttest attitude mean scores than males.

(2) Those students whose families are not on welfare will achieve significantly higher posttest attitude mean scores than those students whose families are on welfare.

(3) Those students living with both parents will achieve significantly higher posttest mean scores than those students living with the mother only.

(4) Those students with no best friend's that smoke will achieve significantly higher posttest mean scores than those students with one or more best friend's that smoke.

(5) Those students with no older siblings at home that smoke will achieve significantly higher posttest mean scores than those students with one or more older siblings at home that smoke.

(6) Those students with no parent(s) at home that smoke will achieve significantly higher posttest mean scores than those students with one or more parent(s) at home that smoke.

The Sample

The sample included one hundred and forty-four students from three lower socioeconomic community elementary schools located in the midwest and east coast.

Thirty-nine midwest students participated in the School Health Curriculum Project Heart Unit taught by a specially trained health education specialist. In addition, thirty-one sixth grade students from the same building received their regular health instruction taught by their regular classroom teacher and served as the Midwest Control Group.

Fifty-one East coast students received the School Health Curriculum Project Heart Unit taught by specially trained classroom teachers. The East coast control group consisted of twenty-six sixth grade students from another school in the same community who received their regular health instruction taught by their regular classroom teacher.

All students were from lower socioeconomic black families. The East coast experimental groups had participated in the Lung Unit of the School Health Curriculum the previous year.

Methodology and Procedures

All experimental students received the Heart Unit of the School Health Curriculum Project over a nine week period of time at one hour per day. The teachers of the experimental groups were specially trained during a two week intensive in-service workshop to implement the Heart Unit.

The criterion measure used in this study was the Teenage Self-Test on Smoking developed by the National Clearinghouse for Smoking and Health. (3) Forty items and a five point Likert scale for students responses comprised the total test. The five responses were: Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree.

Seven questions relating to demographic information about each student were answered before completing the inventory. The attitude section response categories were assigned scores ranging from one to five. A score of five for a response category indicated a very favorable health attitude toward the statement and a score of one indicated a very negative or unfavorable health attitude toward the item in question. "Undecided" responses always had the value of three assigned. The highest obtainable attitude score was 200.

One experimental class from the Midwest and one experimental class from

the East coast were given the inventory on a pretest-posttest basis. The third experimental group completed posttests only. All control groups were tested on a pre-post basis.

Data Analysis

Mean scores and standard deviations by demographic variable were obtained for the entire sample. T-tests of significance were performed between pre-tests and posttests mean scores to determine if any significant differences occurred by demographic variable either before or after exposure to the School Health Curriculum Project.

Definition of Terms

(1) SHCP : Referred to School Health Curriculum Project - Heart Unit

(2) Specially Trained Classroom Teacher: Referred to certified teacher who participated in the sixth grade Heart Unit inservice workshop

(3) E1: Referred to the Midwest experimental group

(4) C1: Referred to the Control group in the Midwest

(5) E2: Referred to the experimental group on the East coast receiving attitude pre and posttests

(6) E3: Referred to the East coast experimental group receiving posttests only

(7) C2: Referred to the East coast control group

Findings

For the seven demographic variables, some of the original categories were grouped. In general, if less than ten percent of the sample fell into a subcategory it was combined with another subcategory that was the most similar to the original. It should be noted that all experimental groups showed a significant difference at the .05 level pre to post on the cigarette smoking attitude inventory mean scores.

Sex: Significant differences at the .05 level were noted between males and females in the Midwest and East coast experimental groups. The direction of significance was in favor of the females.

INSERT TABLE I

No significant difference was noted at the .05 level between males and females of the control groups. However, females in these groups achieved higher posttest mean scores than males, but they were not significantly different at the .05 level.

Previous studies (4) showed that attitude test results of elementary school students revealed differences and that these differences were in favor of the female. Since females achieved significantly higher posttest mean scores, hypothesis #1 was accepted.

Welfare Status: No significant differences were noted at the .05 level on posttest mean scores between those students from families on welfare and those students from families not on welfare. (See Table II) This held true for

INSERT TABLE II

both experimental and control groups.

It doesn't appear that welfare is a "stigma" in this sample of students as it might be in more affluent areas. Since the literature revealed a paucity of information with respect to attitude test scores of students from families on welfare, it was assumed by the investigator that a significant difference would occur and the difference would be in favor of the students from families not on welfare. Based on the findings of this study, hypothesis #2 was rejected.

Residency Status: Significant differences were noted at the .05 level between those students who lived with both parents and those experimental students who lived with the mother only on attitude posttest mean scores. (See Table III) The differences were in favor of the students who lived

INSERT TABLE III

with both parents. No significant differences were noted at the .05 level between control group students who lived with both parents and those who lived with the mother only. However, those control group students who lived with both parents achieved higher posttest mean scores.

This finding was to be expected since it has been well documented that children from two parent families perform better in schools than children from one parent families. (5) It appears that this finding holds true for lower socioeconomic students. Based on the findings with respect to residence status, hypothesis #3 was accepted.

Best Friend's Smoking Status: Significant differences were noted at the .05 level on posttest mean scores both the experimental and control group students between those students who had no best friends that smoked and those students who had one or more best friends that smoked. (See Table IV) The significance was in favor of those students who had no best friends that smoked.

INSERT TABLE IV

This finding was to be expected since it has been observed that the peer group can exert the most influence on an individual with respect to smoking behavior. (6) It appears that this pressure can influence lower socioeconomic students as well, and this influence is possibly reflected in lower posttest

mean scores of those students with one or more best friends that smoke cigarettes. Based on the findings of this part of the study, hypothesis #3 was accepted.

Older Siblings Smoking Status: Significant differences were noted at the .05 level between those experimental students with older siblings at home that smoked and those students with no older siblings at home that smoked. (See Table V) The direction of significance was in favor of those students

INSERT TABLE V

who had no older siblings at home that smoked. No significant difference was noted at the .05 level between those control group students who had no older siblings at home that smoked and those who had one or more older siblings at home that smoked.

This finding was to be expected since it was assumed by the investigator that an older sibling at home that smoked could influence the smoking attitudes of the younger siblings. Based on these findings, hypothesis #4 was accepted.

Parental Smoking Status: No significant differences were noted at the .05 level between those experimental and control group students whose mother smoked and those students whose mother did not smoke. (See Table VI) However

INSERT TABLE VI

it must be mentioned that those students whose mother did not smoke achieved higher posttest mean scores than those students whose mother did smoke. (See Table VI)

Also, no significant differences were noted at the .05 level between those experimental and control students whose father smoked and those students whose father did not smoke. (See Table VII) Those students in E1 whose father

did not smoke achieved higher posttest mean scores than those students whose

INSERT TABLE VII

father smoked. This finding was not consistent since E2 students whose father smoked achieved higher posttest mean scores than those students reporting that their father did not smoke.

Interestingly enough, the third experimental group (E3) reported that none of their mothers or fathers smoked cigarettes. It is not known to the investigator if the reporting of parental smoking status was accurate. However, it did make comparisons of mean scores between the two factions of students impossible.

Based on these findings, there appears to be no relationship between parental smoking behavior and posttest attitude mean scores after exposure to the School Health Curriculum Project Heart Unit. The opposite was expected by the investigator, since it was felt that parental smoking behavior could influence a child's attitude toward smoking. Since this finding occurred, hypothesis #6 was rejected.

Summary of Findings

It appears that the only variables affecting performance on the cigarette smoking attitude inventory after exposure to the experimental curriculum were sex, residency status, best friend's smoking status, and older siblings smoking status. Welfare status and parental smoking behavior did not appear to influence achievement on posttest mean scores.

A significant difference was noted at the .05 level between pre and post-tests of the students participating in the Heart Unit. Therefore, the curriculum appeared to have an effect on the experimental groups reflected

in the significant difference between pre and posttest mean scores.

Conclusions

Based on the findings of this research, it was concluded that:

(1) The School Health Curriculum Project Heart Unit can be effectively implemented in lower socioeconomic schools.

(2) Females achieved significantly higher posttest mean scores than males.

(3) Welfare status does not influence posttest mean scores of those students exposed to the School Health Curriculum Project Heart Unit.

(4) Best friend's smoking behavior can influence a student's performance on the Teenage Self-Test on Smoking. Those students with one or more best friends that smoke achieve lower posttest mean scores than those students with no best friend's that smoke.

(5) Older siblings at home that smoke can exert a negative influence on a student's performance on the Teenage Self-Test on Smoking.

(6) Parental smoking behavior does not exert an influence on student's performance with respect to the Teenage Self-Test on Smoking.

Recommendations

(1) Only short term attitudinal gains were reported in this study. Therefore, there is a need for further studies with larger samples of lower SES students to determine the long range effectiveness of the School Health Curriculum Project Heart Unit.

(2) Further studies need to be undertaken to determine what influence the parent does exert on the potential smoking behavior of their child.

(3) There is a need for more information as to how the peer social system influenced attitudes toward cigarette smoking.

(4) There is a need for more information with respect to the significant differences in attitude mean scores of males and females.

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4. Johns, E.B., "The School Health Education Evaluative Study, Los Angeles Area: An Example of a Modern Evaluation Plan," Journal of School Health, 32, (January, 1962), pg. 511.

5. HAVE TO FIND THIS ONE - I THINK IT IS EHRLICH - POPULATION BOMB.

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TABLE I

Pre and Posttest Attitude Mean Scores, Standard Deviations, and t Values by Sex

Group	Sex	N	Pretest X	Pretest SD	Pretest t	Posttest X	Posttest SD	Posttest t
E1	Males	15	140.27	2.32	.32	164.07	2.60	1.97*
	Females	18	140.61	2.10		165.30	2.17	
C1	Males	16	141.00	3.07	.28	142.31	2.91	.19
	Females	15	141.46	3.40		142.55	3.03	
E2	Males	13	150.50	3.61	1.32	163.89	1.62	2.03*
	Females	16	151.59	3.98		165.11	3.07	
E3	Males	11				164.50	3.15	2.24*
	Females	11				166.50	3.15	
C2	Males	14	140.86	3.28	.53	142.03	3.74	1.19
	Females	12	141.28	2.16		143.05	3.07	

*Significant at .05 level

TABLE II

Pre and Posttest Attitude Mean Scores, Standard Deviations and t Values by Welfare Status

Group	Welfare Status	N	Pretest X	Pretest SD	t	Posttest X	Posttest SD	t
E1	Yes	16	141.92	3.23	.97	164.86	4.52	.086
	No	17	142.86	3.98		164.83	5.09	
C1	Yes	19	141.84	3.31	.69	142.34	2.11	1.94
	No	12	142.54	3.91		145.64	3.78	
E2	Yes	20	146.55	6.12	.58	164.51	5.01	1.31
	No	9	147.06	3.63		163.33	3.12	
E3	Yes	15				164.67	3.68	.93
	No	7				165.64	3.89	
C2	Yes	19	138.12	3.12	.91	140.06	3.12	.37
	No	7	137.31	2.91		139.89	2.66	

TABLE III

Pre and Posttest Attitude Mean Scores, Standard Deviations, and t Values by Residency Status*

Group	Residency Status	N	Pretest X	Pretest SD	t	Posttest X	Posttest SD	t
E1	Mother	17	139.65	4.17	.94	161.54	4.52	2.37**
	Both Parents	16	140.42	3.19		164.45	4.08	
C1	Mother	18	140.17	3.89	.36	141.46	3.72	.28
	Both Parents	13	140.57	5.88		141.72	4.81	
E2	Mother	15	141.55	4.12	4.67**	161.58	2.31	2.41**
	Both Parents	14	145.49	3.02		163.89	2.91	
E3	Mother	15				162.86	3.83	11.65**
	Both Parents	7				168.45	3.62	
C2	Mother	18	139.69	3.66	.73	140.85	3.15	.68
	Both Parents	8	138.81	2.78		141.56	2.84	

* Residency status refers to whom the child is living with

** Significant at .05 level

TABLE IV

Pre and Posttest Attitude Mean Scores, Standard Deviations,

and t Values by Best Friend's Smoking Status

Group	Number of Best Friends That Smoke	N	Pretest X	Pretest SD	t	Posttest X	Posttest SD	t
E1	No Friends Smoke	15	140.70	5.22	1.15	165.75	3.35	6.79*
	One or More Smoke	18	139.63	4.04		161.55	4.93	
C1	No Friends Smoke	14	138.50	5.66	.53	141.33	5.01	4.36*
	One or More Smoke	17	137.90	3.98		138.65	3.63	
E2	No Friends Smoke	7	149.05	2.66	.63	163.83	3.35	4.36*
	One or More Smoke	22	147.26	2.09		161.39	3.20	
E3	No Friends Smoke	14				166.00	3.62	2.75
	One or More Smoke	8				164.27	3.89	
C2	No Friends Smoke	19	141.98	2.72	2.18	153.84	2.83	21.68*
	One or More Smoke	7	143.10	3.91		142.65	1.47	

* Significant at .05 level

TABLE V

Pre and Posttest Attitude Mean Scores, Standard Deviations and t Values by Older Siblings Smoking Status

Group	Older Siblings Smoking Status	Pretest N	Pretest X	Pretest SD	Pretest t	Posttest X	Posttest SD	Posttest t
E1	None Smoke	25	139.65	3.97	2.39*	168.33	3.34	6.65*
	One or More Smoke	8	137.99	2.71		165.60	3.91	
C1	None Smoke	20	138.89	5.94	3.96*	139.55	2.98	2.51
	One or More Smoke	11	137.51	2.67		138.74	4.71	
E2	None Smoke	22	142.30	3.61	4.05*	162.29	3.92	2.51*
	One or More Smoke	7	140.00	2.17		160.75	3.34	
E3	None Smoke	16				163.50	1.71	2.03*
	One or More Smoke	6				161.73	2.76	
C2	None Smoke	14	140.29	1.19	1.32	140.82	2.01	1.63
	One or More Smoke	12	141.36	3.99		141.81	3.11	

* Significant at .05 level

TABLE VI

Pre and Posttest Attitude Mean Scores, Standard Deviations,

and t Values by Mother's Smoking Status

Group	Mother's Smoking Status	Pretest N	Pretest X	Pretest SD	Pretest t	Posttest X	Posttest SD	Posttest t
E1	Yes	21	138.24	4.96	1.35	158.40	3.98	1.67
	No	12	137.36	3.71		159.63	3.16	
C1	Yes	17	139.76	2.76	1.05	137.94	2.13	1.21
	No	14	138.84	3.99		138.56	2.68	
E2	Yes	11	141.18	1.09	1.05	162.42	3.74	1.21
	No	18	142.03	3.71		163.19	2.73	
E3	Yes	00						
	No	22				157.27	8.79	
C1	Yes	10	140.10	2.03	.67	141.16	2.46	.65
	No	16	139.89	3.01		140.95	1.34	

TABLE VII

Pre and Posttest Attitude Mean Scores, Standard Deviations,

and t Values by Father's Smoking Status

Group	Father's Smoking Status	N	Pretest X	Pretest SD	t	Posttest X	Posttest SD	t
E1	Yes	18	140.61	2.10	.92	164.79	3.26	1.43
	No	15	141.06	2.55		165.67	2.69	
C1	Yes	19	139.78	3.46	.28	141.33	4.07	.24
	No	12	140.00	2.94		141.79	3.40	
E2	Yes	20	142.45	3.05	1.61	165.00	4.58	1.52
	No	9	143.86	1.71		164.08	2.19	
E3	Yes	00						
	No	22				159.27	8.79	
C2	Yes	15	138.92	2.86	1.55	140.50	2.71	1.59
	No	11	139.63	2.59		141.35	2.26	